Eastern Shore Math Consortium III

Year 1 Annual Evaluation Report

August 29, 2008

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1 INTRODUCTION

The Eastern Shore Math Consortium (ESMC) is a partnership of five Eastern Shore school systems (Caroline, Dorchester, Kent, Somerset, and Wicomico), Salisbury University ("SU"), and the Maryland State Department of Education (MSDE). The consortium was developed in order to organize professional development opportunities that would increase teacher effectiveness in pedagogical and content-based areas. The consortium believes that teacher effectiveness strongly correlates with student achievement, and that improving teachers' content knowledge will lead to higher student test scores on the Maryland School Assessment (MSA). As the Consortium writes in its application for MSDE funding:

> *Low scores on the Maryland School Assessment (MSA) in mathematics by a large percentage of students in grades 4-8 have led the Eastern Shore Math Consortium (ESMC) to design a professional development project for 60 teachers of mathematics in those grades. The goal of the project is to raise student achievement on the MSA by deepening teacher content knowledge in mathematics and increasing the number of highly-qualified mathematics teachers.*

Wicomico County serves as the lead agency for the ESMC project, while representatives from each of the partners serve on a project Advisory Committee. The Advisory Committee meets several times per year in order to plan professional development opportunities. Since January 2006, the ESMC has received three separate two-year grants from MSDE through its Math-Science Partnership (MSP) program. The current grant, referred to in this report as "ESMC III", began in January 2008 and will end in October 2009. All of the ESMC grants operate on a cohort model, where groups of teachers participate in professional development activities together. Two groups of teachers participate in each ESMC grant and each group is titled with a different cohort number.

Figure 1 illustrates the timeframe and cohorts of each grant. In addition to teaching and reviewing math content, the first two ESMC grants focused on improving teacher effectiveness by providing participants with technology to use in their classrooms, such as SMART boards and document cameras, and engaging them in hands-on activities that they could adapt for their own classrooms. In contrast, the third and current ESMC grant is geared towards teachers who have already participated in an earlier ESMC grant as well as math *coaches* who were not previously invited to participate in ESMC. Figure 1illustrates the nature of participants in each of the six cohorts.

Through this unique composition of participants, ESMC III strives to build upon teachers' previous ESMC experience and incorporates math coaching as a way to engender more long-term and sustainable change. In addition to the regular ESMC activities (an online discussion board, a five-day Summer Program[1], membership and attendance at a professional conference and organized daylong workshops addressing specific topics of interest to the participants),

[1] In the two previous ESMC grants, this summer professional development program was referred to as the Summer Institute.

ESMC III devotes significant time and resources to lesson plan development with implementation review.

Figure 1: Grant Information Details

Grant	Grant Date	Cohort Name and Date		Nature of Participants
ESMC I	July '05 to Aug. '07	Cohort I	7/1/05–9/30/06	Middle School Teachers
		Cohort II	10/1/06–8/31/07	Middle School Teachers
ESMC II	Feb. '07 to Sept. '08	Cohort III	2/19/07–9/30/07	Elementary and Middle School Teachers
		Cohort IV	10/1/07–9/30/08	Elementary and Middle School Teachers
ESMC III	Dec '07 to Aug '09	Cohort V	12/24/08 – 6/30/08	Consists of participants from Cohorts I-III and math coaches who did not previously participate
		Cohort VI	7/1/08–8/31/09	Consists of members from Cohorts I-IV and math coaches who did not previously participate

Macro International ("Macro") has served as the external evaluator for all three ESMC grants. This report describes the methods and findings of Macro's evaluation of Year 1 of the third grant. Because the activities in ESMC I and II differ from the activities in ESMC III, Macro has developed a specific logic model for each grant to serve as a framework for the evaluation reports. The logic model depicts the following categories for each ESMC grant: inputs, activities, outputs, and outcomes. One of the goals of the logic model is to ensure that ESMC's inputs and activities lead to outputs that will achieve the desired outcome of increased student scores on the MSA. Figure 2 is an illustration of the logic model developed specifically for ESMC III. The first column on the left illustrates the *situation* that the grant is trying to address, which is that a large percentage of students on the Eastern Shore in grades 4-8 are achieving low scores on the MSA.

The second column identifies important *inputs* for the grant. Inputs include accountability measures, including No Child Left Behind's regulations regarding "high quality teachers" and the regulation for Maryland districts and schools to make Annual Yearly Progress (AYP) on student achievement measures. The other inputs are important resources from which the ESMC has drawn, such as SU's expertise in teacher professional development.

The third column identifies the grant's professional development *activities*. The activities for ESMC include lesson plan development with implementation review, an online discussion board facilitated by a SU professor, a five-day Summer Program, membership to the National and Maryland Councils of Teachers of Mathematics (NCTM and MCTM) and organized daylong workshops addressing specific topics of interest to the participants.

The fourth and final column shows the grant's anticipated short-term, medium-term and long-term *outcomes.* Short-term outcomes deal with the tangible skills that participants learned because of the grant. In the case of this grant, one of the immediate outcomes was that 13 teachers and 5 math coaches received extensive professional development on the subject of lesson development and statistics, data analysis, probability and the line of best fit. In addition, the participants created an evaluation rubric that identified the important aspects of a lesson plan. Finally, teachers created lesson plans and received individualized feedback from experts in the mathematics and teaching professions.

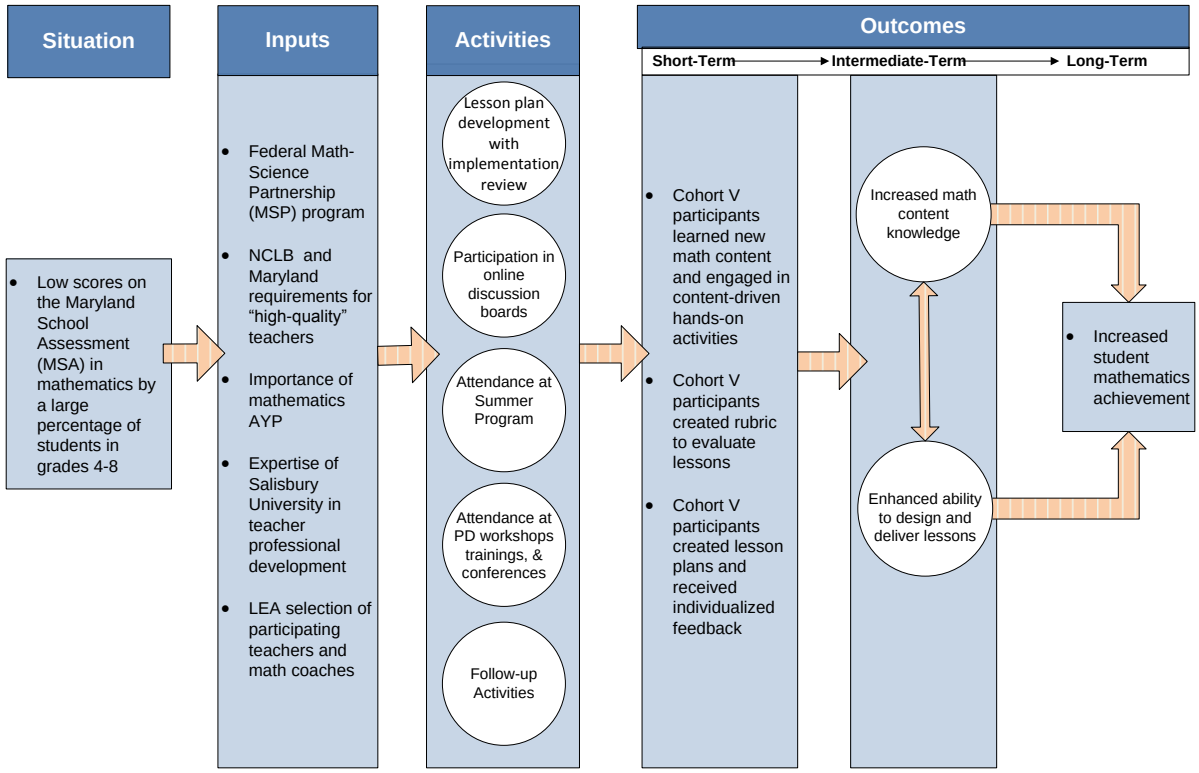
The intermediate-term outcomes identify modified or new behaviors, practices or policies that occur as result of what participants learn through ESMC. The professional development provided through this grant aims to increase participants' mathematics knowledge and their ability to provide high-quality instruction to students. In addition, the activities in this specific grant aim to enhance participants' ability to design and deliver lessons.

The final box on the right-hand side of the logic model illustrates that while short and intermediate-level outcomes are important, the overall goal of the grant is to improve student learning, and therefore, increase student mathematics achievement on the MSA.

The second section of this report evaluates the three primary grant activities for Cohort V- lesson plan development, participation in the online discussion board and attendance at the Summer Program. The third and fourth sections evaluate progress towards the intermediate and longer-term outcomes. The fifth and final section of the report summarizes evaluation findings, and provides recommendations for the ESMC partners for Year 2 of the grant.

Appendix 1 of this report specifically addresses progress made towards the stated goals, objectives, strategies, and activities described in the grant proposal. Progress towards these goals is described in the text of the report, but this appendix provides a more direct assessment of the extent to which the ESMC partnership has completed their proposed activities.

Figure 2: Logic Model for Eastern Shore Math Consortium Grant III



2 EVALUATION OF PROFESSIONAL DEVELOPMENT ACTIVITIES

Cohort V consists of 18 teachers and math coaches who represent the counties of Caroline, Dorchester, Kent, Somerset, and Wicomico and the Diocese of Wilmington. Thirteen of the participants were teachers who had participated in a previous ESMC grant and five participants were math coaches who were new to the program. Notably, ESMC III was the first of the three grants to allow math coaches to participate, as earlier grants were only open to classroom teachers.

The majority of ESMC III participants taught general math, in grades ranging from three to seven. At the time the data was collected during the January/February 2008 timeframe, the average length of time that participants were in their current positions ranged from one month to 31 years, with an average of 5.6 years and median of 3 years. In addition, five participants had served in their current position for one year or less. Lastly, in the area of certification, 16 participants indicated that they had achieved "highly qualified status."

2.1 LESSON PLAN DEVELOPMENT WITH IMPLEMENTATION REVIEW

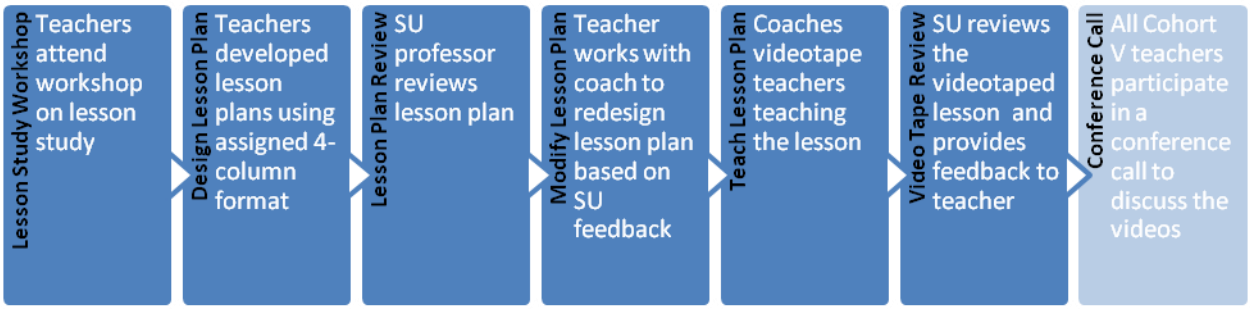
2.1.1 Process

One of the central goals of ESMC III is to build upon the teachers' previous ESMC experience and bring about more long-term and sustainable change. The ESMC III grant addresses pedagogy by conducting a series of activities focused on lesson study that aim to improve the ways in which participants design and conduct their lessons.

For Cohort V, the activities related to lesson study began with a six-hour workshop run by professors from SU on March 1, 2008 During the workshop, participants learned about the lesson study model, discussed the criteria that one would use in order to evaluate a mathematics lesson, analyzed a sample lesson using this criteria, and revised the sample lesson accordingly. The full agenda for the workshop appears in Appendix 2.

One of the goals of the workshop was to prepare participants to develop their own lesson plans using the "4-column" format introduced in the workshop. Once participants developed their lesson plans, they sent them to SU for review and feedback. Professors in the Math and Education departments then reviewed each lesson and provided thorough feedback to each teacher. The participants then worked with their respective math coaches in order to incorporate the relevant feedback into the lesson plan. Subsequently, the coach videotaped the teacher delivering the lesson to a class. The videotaped lessons were then sent back to SU for a review that focused more on lesson delivery rather than lesson design. After SU reviewed the tapes, the Cohort V participants were supposed to participate in a conference call to discuss the videos. However, SU received the completed videos later than scheduled and the conference call was canceled. Figure 3 depicts the various lesson study activities in chronological order.

Figure 3: Lesson Study Activities

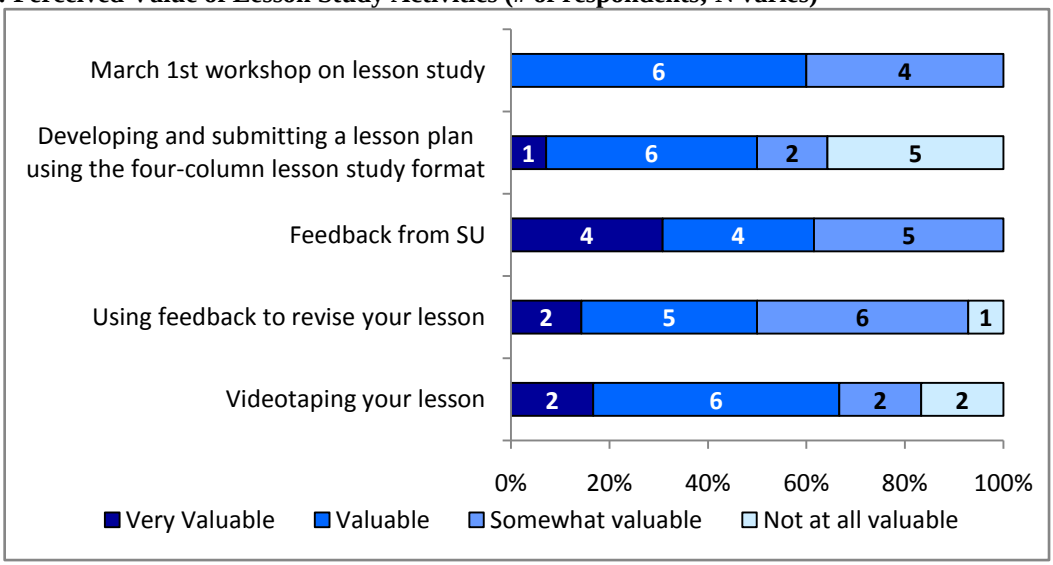


2.1.2 Evaluation

2.1.2.1 Teacher Ratings of Usefulness of Lesson Study Activities

On the first day of the 2008 Summer Program, Macro International administered a survey that asked participants to provide feedback on the value of the lesson study activities that occurred prior to the Summer Program.[2] The survey asked participants to consider how valuable each of these activities was in helping them improve their teaching. Survey results appear in Figure 4.

Figure 4: Perceived Value of Lesson Study Activities (# of respondents; N varies)

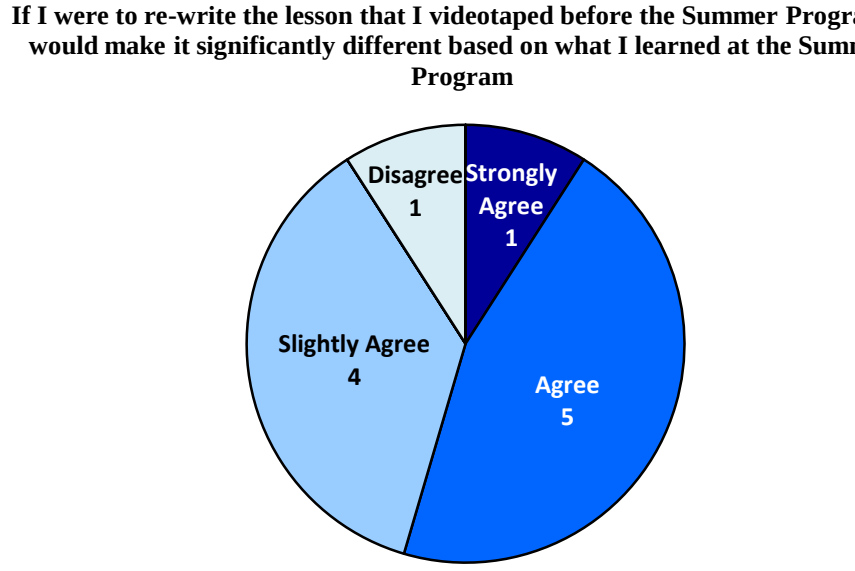


At least 50 percent of participants found each activity to be "very valuable" or "valuable." However, some activities also received weaker ratings—for example, 5 of 12 respondents indicated that the process of developing a lesson plan using the 4-column lesson study format was "not at all valuable."

[2] SU's review of participants' videotaped lesson plans occurred during the Summer Program, after Macro administered the survey.

The survey also asked teachers a series of questions about the feedback they received on their lesson plans and the process of revising their lesson plans using this feedback. The data indicates that if teachers did not find the feedback to be very valuable, chances were very high that the process of revising the lesson was not valuable either. In a follow-up question that appeared on the post-Summer Program survey, participants were asked whether they would "significantly modify the lesson plans they designed in the spring/summer based on what they had learned in the Summer Program." The level of agreement varied, although all but one person agreed to some extent (Figure 5). A more careful analysis of this data revealed that participants who found more value in SU's feedback in the spring were more likely to "strongly agree" or "agree" with this particular statement. Conversely, participants who found SU's feedback to be only "slightly valuable" were more likely to "slightly agree" or "disagree" with this statement. This could imply that some people reacted more positively to the lesson study process than others.

Figure 5: Impact of Summer Program on Lesson Plan Design



The participant feedback that Macro collected through a focus group and through open-ended survey questions provided more insight into why some participants were not entirely satisfied with the lesson study activities during the spring. Due to the timing of grant funding, all pre-Summer Program activities had to take place in only a few months. As a result, many participants said they felt rushed by having to complete the lesson study activities within a 3-month period at the end of the school year, and suggested spreading the lesson study component over the entire school year. In addition, some participants joined Cohort V after the first lesson study workshop had already passed and therefore missed the introduction to the lesson study activities. As a result, four participants "disagreed" or "strongly disagreed" that the instructions they received on how to complete activities this spring were clear. Furthermore, many participants said that it was hard to think ahead and identify a lesson in the March/April timeframe that they would not be teaching until May/June. Lastly, many participants felt frustrated by the logistics of the videotaping. A couple said that they could not find someone to videotape them and ended up leaving the camera stationary. Others complained that they did not

know how to use the videotaping equipment and would have benefited from technology training prior to videotaping the lesson.

As part of the pre-Summer Program survey, Macro asked participants if based on their experience with the lesson study workshop, the lesson study design and implementation, and the online discussion, they were glad they had participated in the grant. Five people "strongly agreed" that they were glad they participated, while six "agreed". The remaining three participants neither agreed nor disagreed. During the focus groups, participants explained that they really valued their participation in the ESMC grant because it gave them the opportunity to network with other teachers and have time to reflect on their own teaching practices. The fact that participants expressed such high levels of satisfaction with their overall experience despite their concerns about some specific project activities implies that they have experienced benefits outside what the logic model delineates as a measurable goal.

2.2 ONLINE DISCUSSION BOARD

2.2.1 Process

During the spring and summer of 2008, Cohort V participants engaged in an online discussion board facilitated by SU professors. The professors assigned a series of weekly readings and asked participants to reflect on the readings by posting two comments in the beginning of the week and two comments at the end of the week. The facilitators monitored postings by discussion members, and posted their own comments and responses to messages.

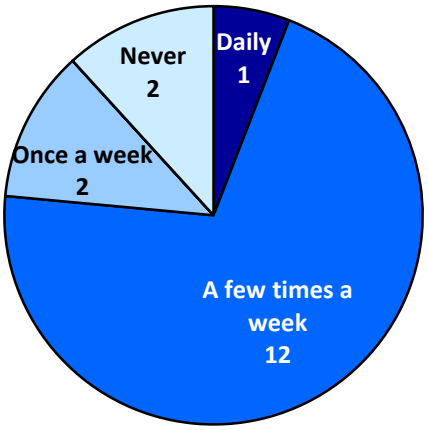
After the first three weeks of the online discussion, Macro International administered a survey that asked participants to provide feedback on the value of this professional development activity. The following section describes the results of that survey.

2.2.2 Evaluation

2.2.2.1 Level of Participation

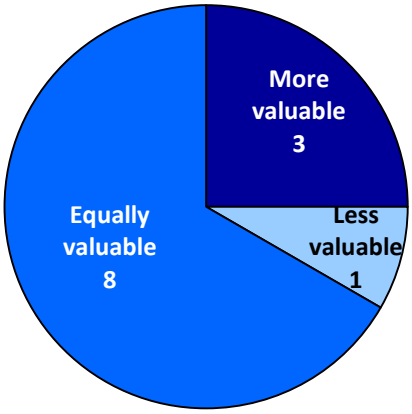
When asked how frequently they participated in the discussion, the majority of participants (12 participants) indicated that they logged in "a few times a week." Of the remaining five participants, one logged in daily, while two logged in "once a week" and two had never logged in Figure 6. Participants cited lack of time, year-end responsibilities and technical difficulties, such as login issues and a lack of internet access at home, as reasons for not participating more frequently.

Figure 6: Frequency of Participation in ESMC Discussion Board (# of respondents, N=17)



Because Cohort V consists of teachers who also participated in a previous cohort, one survey question asked how valuable this online discussion was in comparison with their previous online discussion. Three respondents indicated that this discussion was more valuable than their previous one (Figure 7). One of these teachers noted that last time (s)he rushed to complete the discussion requirements, but this time (s)he is reading and responding more often. Another teacher who found this discussion to be more valuable felt that this year's pertains more to day-to-day operations. One person found this discussion to be less valuable and the remaining eight teachers found that the current and previous discussions were equally valuable. Five teachers did not answer the question, likely because they had not previously participated in another ESMC discussion board.

Figure 7: Perceived Value of this Discussion Board Compared to Previous Discussion Board (# of Respondents; N=12)



Participants also discussed the online discussion board during the focus group, at which point they had an additional four weeks to use the discussion board. Several participants said that the first discussion board they participated in (with their original cohort) was better because there was more idea sharing between participants and the discussion had a more "positive" tone. For example, they said, in the first discussion people would begin their posts with comments such as "In my classroom, I do this…," which gave the other participants ideas for their own classes and also provided insight into what teachers were doing in other grade levels. In this year's discussion board, however, participants said that some comments came off in a more negative tone, often beginning with "I can't do this because…" As a result, the current discussion board was less fluid and ultimately perceived to be less valuable by some of the participants.

2.2.2.2 Other Feedback from Participants

When asked to explain what they liked most about participating in the online discussion, Cohort V members most frequently mentioned the following aspects of the activity:

- Sharing their opinions with other participants;
- Reading other people's comments;
- The friendly and open nature of the dialogue;
- The convenience of being able to log and work at their own pace.

The survey also asked participants to make suggestions for how to improve future online discussions. Three participants suggested posing a specific question as a way to stimulate the discussion. Similarly, one said that the discussions should have a shorter time span or that the facilitator should provide prompts to stimulate conversation. One teacher also expressed that (s)he would like more help with technical issues.

2.3 SUMMER PROGRAM

2.3.1 Process

During the summer of 2008, Cohort V participants attended the annual ESMC 5-day Summer Program. The first three days took place on June 16-18 and the last two days took place on July 15 and 16. During the first three days, participants developed a lesson plan rubric as a whole group and then designed math lessons based on the rubric. During the last two days, the participants engaged in hands-on activities to review content related to statistics, data analysis, probability and the line of best fit.

At the end of the last day, Macro International administered a survey to obtain feedback about participants' experience in the Summer Program. Although Cohort V had 18 enrolled participants and coaches, four participants were not able to attend the last two days of the institute due to other mandatory activities in their counties. Therefore, only 14 participants responded to the post-Summer Program survey.

2.3.2 Evaluation

2.3.2.1 Overall Quality

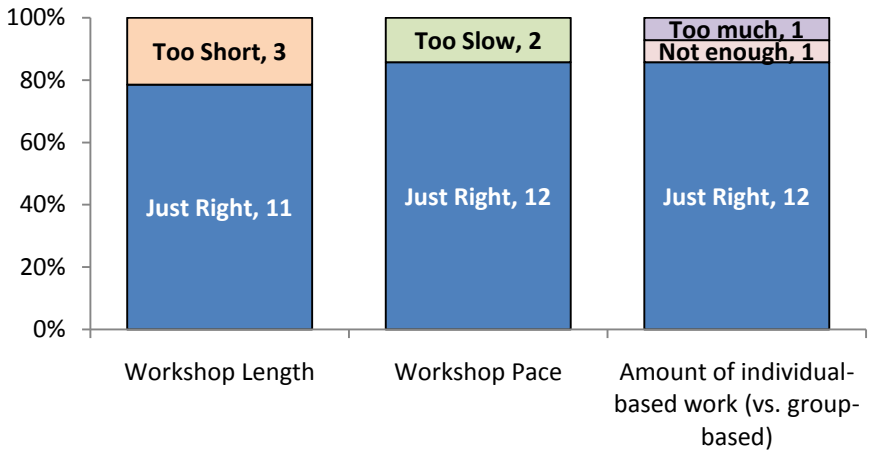
After the Summer Program, Macro administered a survey to assess participants' experience in this professional development activity. Based on the survey data, participants were generally satisfied with the Summer Program, but did not find it to be as valuable as their experience in the first Summer Program. The majority of participants (10 people) in this year's Program rated it as "good," and only two people found it to be "excellent" (Figure 9) Participants noted that they preferred their initial Summer Program because it focused more on math content than this year's Program.

Figure 8: Perceived Summer Program Quality (# of respondents; N=14)

2.3.2.2 Summer Program's Pace, Length, and Activity Mix

Survey data also indicated that some participants were not completely satisfied with the pace of this year's Program. Although the majority of participants indicated that the length of the Program was "just right," three people said it was "too short." In addition, the majority of participants thought that the pace of the workshop was "just right," two participants said it was "too slow." Finally, the majority of participants were pleased with the mix of group work and individual work. Overall, two people would have liked to see a slightly different mix of activities- one person would have liked to see more group work and one person would have liked to see more individual work. Figure 9 provides a summary of these results.

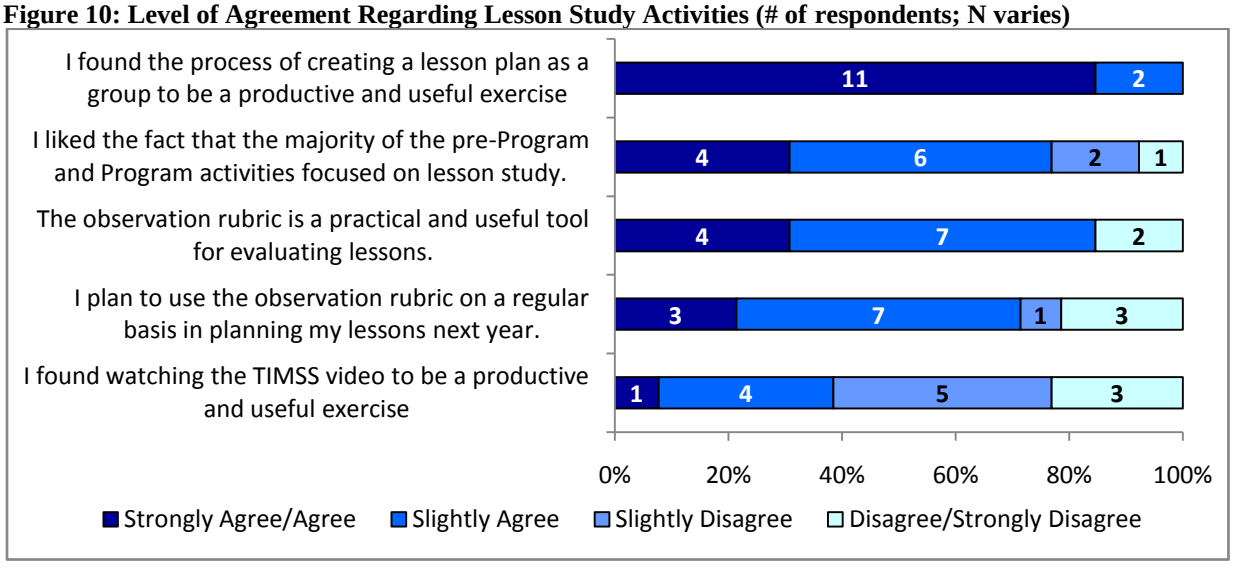
Figure 9: Workshop Pace, Length, and Activity Mix (# of respondents; N=14)



2.3.2.3 Content

Through surveys and a focus group, participants also had an opportunity to provide feedback on the content of the Summer Program, including the group lesson plan, the observation rubric and the Trends in International Mathematics and Science Study (TIMSS) video. The majority of participants felt that the latter two days of the Summer Program were significantly more valuable than the first three days because they preferred the focus on math content and hands-on activities rather than the TIMSS video and rubric development. Most commented that the material during the last two days was more applicable for classroom use. Some cited activities on expected value, dependent and independent variables, a "sports plot", capture/recapture, and the tree diagram as being particularly valuable. Figure 10 summarizes participants' feedback on these activities.

Figure 10: Level of Agreement Regarding Lesson Study Activities (# of respondents; N varies)



2.3.2.3.1 Group Lesson Plan

Based on the data, participants found the opportunity to develop a lesson plan with other members of their county to be extremely valuable. In fact, eleven of the participants "strongly agreed" or "agreed" that the "process of creating a lesson plan as a group was a productive and useful exercise." During the focus group, several participants commented that they would have liked more time to work on the group lesson plans because it was an opportunity for them to learn what content was being taught in the earlier and later grades. Through this cross-grade interaction participants gained a more holistic understanding of how a child moves through the math curriculum and identified ways to modify their approach in order to prepare students for what they will learn in future grades.

The sole critique that participants expressed was that there was not enough time allotted for this activity and most of them were not able to complete their lesson plans. Since this activity took place at the end of the third day (which was the last day of the first half of the Summer Program), there was no opportunity for participants to resume the discussion the following day. Once they reconvened for the second half of the Program one month later, the discussion was no longer relevant.

2.3.2.3.2 TIMSS Video

The majority of participants indicated that they did not enjoy the TIMSS video. Eight particpants disagreed to various extents that watching the video was a productive and useful exercise, primarily because it was seen as less applicable to every-day classroom use (Figure 10). Five participants thought there was too much time spent watching the video, while two others felt that SU professors could facilitated and executed the time spent on the TIMSS video more effectively. Another participant explained that the information in the video was not applicable because of differences in cultural and socio-economic situations of students in the United States compared with other countries. One participant commented that it would have been a better use of time to watch the video independently and then discuss it on the online discussion board. Conversely, one participant thought that the video was rushed and (s)he would have liked to spend more time on it. Another participant found it helpful to see how content is taught in countries that continuously outperform the United States in multiple subject areas.

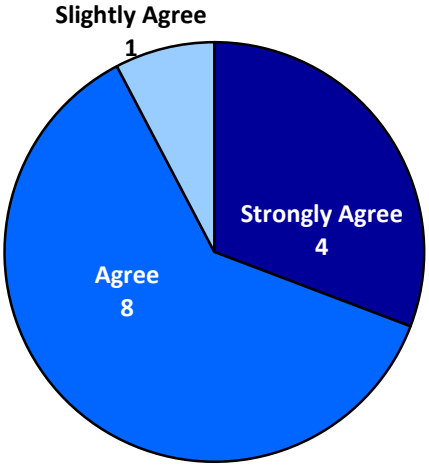
2.3.2.3.3 Lesson Rubric

The other activity that participants thought could be improved was the development of the lesson plan rubric. Participants found that although the rubric was useful, they spent too much time developing it. One teacher commented that it would have been useful to complete the rubric prior to writing and taping the lesson plan. (S)he noted that the rubric is not practical for teachers to use on a day-to-day basis in the classroom but it could be useful for professional development and post-observation conferencing. In fact, only three participants "strongly agreed" or "agreed" that they plan to use the observation rubric on a regular basis (Figure 10).

2.3.2.4 Overall Experience

Interestingly, when participants were asked whether participation in this grant would help them be more effective teachers, all respondents agreed to some degree: four respondents "strongly agreed," eight respondents "agreed" and one respondent "slightly agreed." This positive response indicates that even the subset of participants that were dissatisfied with individual aspects of the grant still thought the opportunity to participate was valuable (Figure 11)

Figure 11: Level of agreement regarding how participation in the grant will increase participant effectiveness (# of respondents; N=13)



2.4 ADDITIONAL WORKSHOPS, TRAININGS AND CONFERENCES

ESMC III organized various workshops and trainings for participants to attend. While Macro did not collect evaluation data on each of these individual activities, in general feedback from participants was very positive. The following is a list of the workshops, trainings and conferences that Cohort V participants had the opportunity to attend.

2.4.1 Kagan Workshops on Cooperative Learning

Forty-one ESMC participants[3] attended the Kagan training on Cooperative Learning, held April 26, 2008. Kagan staff administered a survey to collect feedback on the workshop and sent the surveys to Macro for analysis. The overwhelming majority thought the training was helpful, relevant, well-organized, high quality, a wise use of their time, and engaging.

[3] ESMC participants from all Cohorts were invited to attend the Kagan workshops

Due to the overwhelming amount of positive feedback from the first Kagan workshop, ESMC organized another Kagan workshop on the topic of Cooperative Learning and Secondary Mathematics. Twenty-five ESMC participants attended this workshop, which was held on July 19, 2008. All of the participants found this workshop to be extremely valuable and gave it the highest possible ranking of "strong." The instructor received reviews saying she was wonderful, great, and good by over half of participants. Participants attributed the strength of the workshop to the instructor's energetic personality, her knowledge of the subject and the ability to explain "everything in depth and answer all questions."

2.4.2 Lucy West Coaching Session

Math instructional coaches and supervisors from participating districts received professional development on math content focused coaching in a one-day coaching workshop instructed by author Lucy West. The workshop took place on March 26, 2008 with 22 coaches and supervisors in attendance. This includes two math coaches from Dorchester and one from each of the other three counties.

2.4.3 Dan Mulligan Workshop on Special Education

Participants also had an opportunity to attend a workshop by *Simply Achieve's* Dan Mulligan, which was held on June 19, 2008 on the topic of special education. Participants found this workshop to be extremely valuable and informative. In fact, four participants identified the Dan Mulligan workshop as one of most valuable summer activities.

2.4.4 Praxis workshop

ESMC organized a Praxis prep workshop on July 14, 2008 in order to help participants pass the Praxis exam.

2.4.5 IPod and podcast training

Participants received their video iPods at a 4-hour technology workshop facilitated by Carla Hurchalla. The workshop was held on June 26, 2008

2.4.6 MICCA Conference in Baltimore April 30/May 1, 2008

2.4.7 MAHETC Conference July 24/25, 2008

2.4.8 Quad County Conference May 20-21, 2008

2.5 ADDITIONAL SUPPORT AND FOLLOW UP ACTIVITIES

One of the goals of the ESMC is to equip participants with skills that continue past their participation in the grant. During the focus group session, participants had an opportunity to discuss the support they received from ESMC personnel.

2.5.1 Participants' Perspective on Past Support

Overall, participants felt very well supported by ESMC organizers. Participants were emphatic about the fact that ESMC organizers do not just hand you something, they teach you how to use it and they teach you when to use it. One participant noted, "The technology and manipulatives I received during Cohort III alone greatly improved my teaching skills. Most importantly, we knew how and when to use them."

Several participants also noted that Nancy Robbins was instrumental in their ESMC experience. They expressed that Nancy was very quick to address questions or issues and when she did not know the answer, she would immediately find someone who did know the answer. One person said, "She is the reason that this [grant] has been successful," while another said, "I have to sing my praises for Nancy. She is one of the most organized women that I have ever met and she is so supportive."

Participants also expressed that the commitment ESMC personnel makes to its participants' growth is clearly visible- "From day one, there is nothing that we haven't been offered or included in." Participants noted that the grant personnel are proactive and always trying to anticipate participants' needs. Another participant commended ESMC for its "huge commitment" to getting participants certified.

The one area where some participants would have liked to see more support is technology support. Participants explained that participants who needed technological assistance did not always have someone in the county who was familiar with the technology, particularly in counties that had fewer participants. People suggested that the grant appoint a technology facilitator to support people's needs.

In addition to the continuous support the Consortium provides, they will also be implementing various follow up activities to ensure that participants feel supported as they apply new strategies in their classrooms. With each of the planned follow-up activities, Macro will use surveys, focus groups and interviews to gather data about the about how participants are adopting and utilizing the tools and resources they gained from ESMC.

2.5.2 Capstone Meeting

ESMC will hold a capstone meeting on September 13, 2008. This meeting will provide an opportunity for Cohort V participants to reconnect and engage in professional development activities that will be facilitated by SU professors. Throughout the grant, Cohort V participants have commented that one of the main benefits to the ESMC program is the ability to network with other teachers. This meeting will be another opportunity for Cohort V participants to continue their dialogue and discussion as they prepare and focus on the school year ahead.

Macro will use the meeting this fall as an opportunity to conduct a focus group with district level staff and math coaches, to discuss activities that are taking place at the LEA level as well as to gather input on how ESMC has impacted participants' knowledge and skills.

2.5.3 Lesson Plan Development

This fall, participants will design and develop a follow-up lesson plan. This will serve two purposes. First, it will allow participants to practice the lesson planning strategies that they learned over the summer. Second, these lesson plans will serve as a demonstration of participants' increased ability and knowledge (see 3.1 below for a more detailed description of how Macro will analyze these lesson plans).

2.5.4 LEA-Level Observations and Ongoing Support

Over the course of the next year, coaches and content supervisors in each of the participating LEAs will support the participants who are participating in Cohort V in a variety of ways. They will conduct periodic observations of their classrooms, and in subsequent meetings will provide formative feedback on how they can improve their practice. One of the topics of these observations and meetings will be the teaching strategies and content that was covered in ESMC professional development activities—particularly lesson planning and delivery. While no more formal lesson study activities are planned as part of Cohort V's participation in the grant, teachers will be given the opportunity to continue on their own, using the video cameras and iPods that have been furnished by the grant.

Based on its experience with previous ESMC grants, the Consortium has determined that it is difficult to coordinate these ongoing support activities as a whole group, because of the different curricula and processes in place across the Eastern Shore. As a result, these follow-up activities will be conducted primarily at the individual LEA level.

Macro will collect evaluation data on these follow-up activities in two ways. First, we will conduct a mid-year survey of all Cohort V participants in the winter of 2009. The goals of this survey will be to a) learn about participants' experiences as they try to implement what they learned in the Summer Program; and b) assess the extent to which partner LEAs have provided effective support to Cohort V participants during the 2008-09 school year. Second, we will conduct individual interviews with members of the grant Advisory Council, to get a district-level perspective on how effective these support activities have been.

3 EVALUATION OF INTERMEDIATE TERM OUTCOMES

3.1 GOAL #1: ENHANCED ABILITY TO DESIGN AND DELIVER LESSONS

3.1.1 Evaluators' Measurement of Change through Analysis of Lesson Plans

In order to assess the impact that ESMC has had on participants' ability to design and deliver lessons, Macro will compare lessons that teachers designed in the spring 2008 semester prior to the summer program to the lessons that teachers design after participating in the summer program. These two lessons will serve as the pre-measure and post-measure, respectively. For Cohort V, Macro will use the rubric that the participants developed during the first half of the Summer Program to score the two sets of lesson plans. By comparing these two sets of scores, we will be able to determine the extent to which participants' ability to develop high-quality lesson plans has improved as a result of their participation in the grant. These scores will be submitted to MSDE as part of the Annual Performance Report data for the ESMC project.

Assuming that the structure of the lesson study remains the same for Cohort VI as it did for Cohort V, Macro will use the same rubric to score the initial lesson plans they submit to the lesson plans they submit following the Summer Program. Again, this will enable us to determine the extent to which participants' ability to develop high-quality lesson plans has improved as a result of their participation in the grant.

3.1.2 Participants' Perspective

3.1.2.1 Experiential Learning and Innovative Teaching Through the Use of Technology

As part of the focus group, Macro inquired about the long-term impact that participants thought the grant has made on their teaching. Many participants expressed that they have completely altered the style of their teaching because of the technological tools they received through the grant.

Many teachers feel that the technology that they received during their first Summer Program caused the most significant change in their teaching style. When asked how the grant changed him/her, a veteran teacher expressed the following: "It changed me a lot. Technology was a huge jump for me but it opened up a new world for me and my kids." Another teacher agreed, adding that the technology allowed for a more experiential learning experience for the students: "I will honestly say that it changed the way I thought about teaching and it changed the way my teaching appeared in the classroom. It made it far more hands on and experiential for the kids. We are now looking at applications that extend into real like problems. I will never go back to the way I was teaching before. Ever." These teachers explained that the classroom experience for their students is now much more experiential, because they can use tools such as the Smartboard to explain their thought process rather than just give a numerical answer.

Other teachers expressed that the technology they received allowed them to feel comfortable with stepping outside the conventional teaching materials. One teacher said: "Everything

changed. Everything. I never had access to technology like what we got [through the grant]. My classroom prior to [ESMC] training was me up front telling the kids how to do it and they would do it." The teachers explained that prior to the grant, they relied on a specific "recipe" or "boxed program" for their teaching methods. The value of the grant was that it gave them, as one participant said, "the confidence to step out of the recipe."

3.1.2.2 Holistic Understanding of how Students Progress through Math at Various Grade Levels

Teachers mentioned that another of the main benefits of participating in the grant was the opportunity to collaborate with other teachers and learn about what they were teaching in other grades. As a result, teachers began to appreciate the importance of adjusting their curriculum to prepare students for future grades. In addition, teachers learned "not only where students were going but where they had come from." Knowing what concepts students were taught in the prior year has helped teachers work more effectively with students who are struggling with certain concepts. Another teacher noted that (s)he gained a lot by interacting with elementary school teachers and (s)he was glad that ESMC decided to recruit them in addition to middle school teachers. Another teacher who shared this sentiment said, "For me, the opportunity to collaborate with other teachers has been one of the best experiences. We are across the board are all so different and to see what people are teaching in their classroom is really helpful….It creates a continuum rather than a chopped up curriculum that takes place from year to year."

During the focus group, teachers reiterated that the opportunity to work with other teachers in their counties to develop a lesson plan was one of the best forums for discussing the cross-grade differences. One of the math coaches who was really pleased with the collaboration between teachers and coaches commented that in his/her role as a coach, (s)he would have never had the opportunity to work with a teacher on designing a lesson plan. In addition, some participants mentioned that the discussion board, particularly from their first Cohort experience, was another opportunity to learn about what took place at the various grade levels because teachers would post comments specifically related to what they were doing at their grade level. Lastly, there were various opportunities throughout both of the Summer Programs for teachers to think about how to apply an activity to their particular grade level. The participants noted that the SU instructors did a good job of asking questions such as, "How would this activity look at the elementary level?"

3.1.2.3 Reflection and Networking

Most participants agreed that the ability to network and reflect on their teaching was invaluable. One teacher made the following statement: "I truly believe that [reflection] is what we lack in our profession because there is no time to sit down and find out what other teachers are doing before or after the school year. The cohorts allow us to do this in an organized fashion. It is helpful to hear that other people have same concerns and problems that I do." Another stated, "The relationship building in this cohort has been amazing. It is so great to have the support from one another. Before [the ESMC], you only had people in your building and felt isolated. I just don't feel that way anymore." Finally, participants praised ESMC for its ability to provide a

professional development in a comfortable, open and collaborative environment. One participant stated, "professional development in schools is a lot more judgmental. I say things here that I would not say in school. There are no repercussions here. The environment here is so much different—much more open-minded."

3.2 GOAL #2: INCREASED MATH CONTENT KNOWLEDGE

3.2.1 Evaluators' Measurement of Changes in Math Content Knowledge

In order to assess the impact that the ESMC has had on participants' content knowledge, Macro will adapt items from the content quizzes in the MSDE algebra online course and use them as a pre- and post-measure of content knowledge. These quizzes will align with the content that participants learn during the Summer Program so that the items match the content goals of the ESMC professional development. Macro will ensure that the quiz items have content validity, so that they are a rigorous measure of teacher learning.

Unfortunately, because of the compressed timeline of the first year of the grant, Macro was not able to establish a baseline measure of Cohort V's content knowledge before they participated in grant activities. Macro is working with grant personnel to identify other sources of data on these teachers' content knowledge, such as quizzes from previous online courses. For Cohort VI, Macro will obtain baseline data by administering a content quiz at an orientation meeting that will take place in the fall once the participants are recruited. These participants will take the same quiz again at the conclusion of the Summer Program. The results from the quiz will serve as the pre-measure and post-measure, respectively. A comparison of these scores will allow us to determine the extent to which participation in the grant has improved participants' math content knowledge.

3.2.2 Participants' Perspective

Because one of the goals of ESMC III is to improve math content knowledge, in the Cohort V focus group Macro asked participants to discuss how their participation in the grant has affected their content knowledge. Most of the participants agreed that their content knowledge and understanding of how different content areas relate to one other has improved because of ESMC activities. However, they felt that their knowledge was impacted more strongly by the first grant in which they participated (ESMC I or II), because these grants had more of an emphasis on content rather than pedagogy. Some participants commented that their content knowledge improved a great deal when they learned how to use graphing calculators in their original cohorts. They noted that using the calculators helped students grasp certain concepts more quickly, such as how different coefficients change the way numbers interact, because they can change the numbers in the calculators and see how the position of the line more immediately.

Another specific content-related area that several participants expressed more comfort with is the Navigations Series[4] and the ability to use discovery as a way to drive their instruction.

Math coaches said they have seen a distinct difference in the teachers who attend ESMC, specifically "a greater depth of mathematical knowledge and a change in their format of teaching." One coach noted that (s)he sees more technology use, more comfort with graphing calculators, and more use of the Navigation Series. This coach further explained that (s)he had been trying to plug the Navigation Series for many years but teachers were not using it. However, during the grant, the teachers finally experienced the Navigation Series and saw the value in using it." Another benefit that the coach noted was that participants are excited about their new skills and they are spreading their knowledge to other teachers in the school.

[4] *Navigations Series* refers to a series of books published by the National Council of Teachers of Mathematics that SU used during the Summer Program.

4. EVALUATION OF LONG TERM OUTCOMES

4.1 IMPROVED STUDENT ACHIEVEMENT ON THE MSA

As the logic model illustrates (Figure 2), the overall goal of the ESMC project is to improve student mathematics achievement. In its application for state funding, the ESMC set as a goal that:

> By June 30, 2009, 10% more 4th through 8th grade students in classes taught by Year 1 participating teachers will score proficient or advanced on the MSA in math as compared to the previous year.

In order to measure whether this goal has been met, in August 2009 Macro International will request from each participating LEA the mathematics MSA scores from 2008 and 2009 of all students taught by Cohort V teachers. By comparing the percentage of students who reached proficient status on the 2008 MSA (before they interacted with Cohort V teacher) to the equivalent percentage who reached proficient status in 2009, we will be able to determine whether the grant's goal has been met.

Macro will also use a quasi-experimental design to compare the achievement of students taught by Cohort V teachers to the achievement of other students in the participating school districts whose teachers have not participated in the ESMC grant. This comparison of "ESMC" and "non-ESMC" students will provide a more rigorous measure of the extent to which teachers' participation in the grant has had an impact on their students' mathematics learning.

We have not yet begun any analysis of student data for this project, because our measurement of improvement in student achievement relies on a comparison of 2008 and 2009 MSA data. Because the true measure of the success of any professional development activity is its impact on student learning, our analysis of these MSA data will be the central focus of our final evaluation report.

5 SUMMARY AND RECOMMENDATIONS

This report describes the activities of Year 1 of the third ESMC grant, and evaluates its progress towards meeting its goals and objectives. The following are some key findings and recommendations:

5.1 FINDINGS

5.1.1 Lesson Study Design and Implementation

- **Participants would have liked more time to develop, review and videotape their lessons.** The majority of participants felt rushed by having to complete the lesson study activities within a 3-month period at the end of the school year. In addition, they said that it was hard to think ahead and identify a lesson in the March/April timeframe that they would not be teaching until May/June. In addition, many participants felt frustrated by the logistics of the videotaping process, either because they could not find someone to videotape them or because they did not know how to use the videotaping equipment.

5.1.2 Summer Program

- **During the Summer Program, participants would have liked to spend more time on math content and less time on certain lesson-study activities.** The majority of participants found the latter two days of the Summer Program to be significantly more valuable than the first three days because they preferred the focus on math content and hands-on activities to watching the TIMSS video and developing the rubric. Most participants disagreed to various extents that watching the video was a productive and useful exercise, primarily because it was seen as less applicable to every-day classroom use. Participants also felt that they spent too much time developing the lesson rubric and would have preferred to review and discuss it but not to develop it from scratch. Participants also noted that it was not practical for teachers to use on a day-to-day basis in the classroom. In fact, only three participants "strongly agreed" or "agreed" that they plan to use the observation rubric on a regular basis.

5.1.3 Networking

- **The ESMC grant has helped participants understand where students are coming from and where they are going (in terms of math content).** The majority of participants found the opportunity to develop a lesson plan with other members of their county to be extremely valuable because it was an opportunity for them to learn what content was being taught in the earlier and later grades. Through this cross-grade interaction, participants gained a more holistic understanding of how a child moves through the math curriculum and identified ways to modify their approach in order to prepare students for what they will learn in future grades.

- **The ESMC provides a safe space for teachers to reflect, learn and network with one another.** Most participants agreed that the ESMC provides an opportunity to network and

reflect on their teaching practices in an organized fashion. Participants praised ESMC for its ability to provide a professional development in a comfortable, open-minded and collaborative environment that participants do not experience within their own schools.

5.1.4 Support

- **Participants feel well-supported.** Participants were emphatic about the fact that the ESMC organizers do not just hand you something, they teach you how to use it and they teach you when to use it. Participants said that because they practiced using the different technologies during the training sessions, they were much more comfortable taking the materials back to their classrooms. Some participants would have liked to see more technology support. Some participants felt they did not always have someone in the county who was familiar with the technology, particularly in counties that had fewer participants.

5.1.5 Changes in Teaching

- **Utilizing ESMC-sponsored technology has helped teachers conduct more experiential and student-centered lessons.** Many teachers feel that the technology that they received during their first Summer Program caused the most significant change in their teaching style. One reason cited is that the technology allowed for a more experiential learning experience for the students because they can use tools such as the Smartboard to explain their thought process. Another reason is that the technology allowed teachers to feel comfortable with stepping outside the conventional teaching materials

5.1.6 Reasons for Participating

- **Technology is participants' main incentive for participating in the ESMC.** The main reasons that teachers choose to participate in the ESMC include complimentary resources, particularly technology; hands-on training in content and technology; a strong network of other teachers to collaborate with; a supportive and non-judgmental environment; and an opportunity to reflect on teaching practices.

5.2 PLANNED EVALUATION ACTIVITIES FOR NEXT YEAR

This section describes the evaluation activities that Macro will be conducting in the upcoming year

5.2.1 Intermediate Goals

- **LEA-Level Observations and Ongoing Support**. Macro will conduct a mid-year survey of all Cohort V participants in the winter of 2009. The goals of this survey will be to a) learn about participants' experiences as they try to implement what they learned in the Summer Program; and b) assess the extent to which partner LEAs have provided effective support to Cohort V participants during the 2008-09 school year. Macro will also conduct individual interviews with members of the grant Advisory Council, to get a district-level perspective on how effective these support activities have been.

- **Gather input on how ESMC has impacted participants' knowledge and skills.** Macro will use the meeting this fall as an opportunity to conduct a focus group with district level staff and math coaches, to discuss activities that are taking place at the LEA level as well as to gather input on how ESMC has impacted participants' knowledge and skills.

- **Determine the extent to which participants' ability to develop high-quality lesson plans has improved as a result of their participation in the grant.** . In order to assess the impact that ESMC has had on participants' ability to design and deliver lessons, Macro will compare lessons that teachers designed in the spring 2008 semester prior to the summer program to the lessons that teachers design after participating in the summer program. These two lessons will serve as the pre-measure and post-measure, respectively. For Cohort V, Macro will use the rubric that the participants developed during the first half of the Summer Program to score the two sets of lesson plans. By comparing these two sets of scores, we will be able to determine the extent to which participants' ability to develop high-quality lesson plans has improved as a result of their participation in the grant

5.2.2 Long-Term Goals

- **Measure how students performed on the MSA.** Macro International will request from each participating LEA the mathematics MSA scores from 2008 and 2009 of all students taught by Cohort V teachers. By comparing the percentage of students who reached proficient status on the 2008 MSA (before they interacted with Cohort V teacher) to the equivalent percentage who reached proficient status in 2009, we will be able to determine whether the grant's goal has been met.

5.3 RECOMMENDATIONS FOR THE UPCOMING YEAR

Based on the feedback we have collected from participants, Macro International makes the following recommendations to the Consortium for next year:

- **Spread lesson study activities over the course of the school year.** Macro recommends that ESMC integrate components of the lesson study activities from the Summer Program into activities that occur over the course of the school year. By doing so, the ESMC can better equip Cohort VI participants to design their initial lesson plans. In addition, participants will be able to apply the lesson planning skills they are taught immediately. Furthermore, participants will have more time to clarify any instructions and address any concerns they may have.

- **Complete lesson study activities by early May 2009.** Due to the timing of grant funding, all Cohort V pre-Summer Program activities were compressed into a short amount of time. Grant personnel are were aware of the challenge that this posed to the participants and plan to spread the activities out over a longer period for Cohort VI. In addition to spreading the activities, Macro recommends that the ESMC aim to complete the lesson study activities by the beginning of May 2009 so that teachers do not feel overwhelmed by having to fit their lessons in at the end of the school year.

- **Integrate more math content into the Summer Program.** Macro recommends that the ESMC consider focusing more of the Summer Program around teaching math content and engaging in hands-on math activities. Macro observed that participants considered the math content component to be extremely valuable and most felt that the latter two days of the Summer Program were significantly more valuable than the first three days.

- **Plan more time for participants to design a lesson plan with their counties.** Macro recommends that grant personnel and SU build more time into the Summer Program for participants to work with other members of their counties to design a lesson plan. Participants found this activity valuable because it was an opportunity for them to engage in cross-grade dialogue and learn what content is being taught in the earlier and later grades. However, participants said they did not have enough time to complete the lesson plans and would have liked to have more time allotted for the activity.

- **Explore the idea of having participants watch and discuss the TIMSS video as part of the online discussion board.** Macro recommends that the ESMC shift the TIMSS video exercise to a pre-Summer Program activity. Watching the video is useful for teachers but could be done independently instead of as a group.

- **Provide an existing rubric to teachers instead of spending time developing one together.** Macro recommends that the ESMC considering providing an existing evaluation rubric to participants. Although the process of developing a rubric from scratch is beneficial and thought provoking, participants expressed that it was not an effective use of time for the Summer Program.

- **Provide more technology support.** Macro recommends that the ESMC find a way to provide more technological support to participants who face technological issues with their equipment, including the video cameras and the technology they received in the first round of the grant.

6 APPENDICES

Appendix 1 Progress Report: Grant Goals, Objectives, Strategies and Activities

PLANNED ACTIVITIES	EVALUATOR COMMENTS	STATUS
Activity 1: Each year, each LEA will identify, recruit and select their allotted number of 4th-8th grade classroom, special education and ELL math teachers to participate in this project. In addition, each district will select one or two math instructional leaders to assume the role of math coach for this grant.	Together, the LEAs identified, recruited and selected 13 4-8th grade teachers and 5 instructional leaders to assume the role of math coach. This number was smaller than the 30 participants that the grant originally aimed to recruit because the timeframe for recruiting was compressed and because Worcester county did not participate, thus eliminating 25 potential participants. The Consortium is aiming to recruit 30 participants for Cohort VI	COMPLETE
Activity 2: The ESMC partnership will plan and deliver a five day summer program in algebra, and topics related to data analysis, taught by faculty from SU's Departments of Mathematics and Education.	ESMC partnership planned and delivered a five day Summer Program. The first three days of the program were held June 16 to 18, while the final two days were held July 15 and 16. The topics of this Program included developing a lesson plan rubric, watching a TIMSS video and learning new math content. For a more detailed discussion of this Program, as well as participants' feedback, see section 2.3 above	COMPLETE
Activity 3: Participating teachers will participate in two half day pre institute workshops on the topic of lesson study, facilitated by 2 math professors from SU.	On March 1, 2008, two math professors from SU facilitated a workshop for participating teachers to prepare them for the lesson plan design and implementation review activity that would take place in the spring and summer. The Consortium made the decision to hold this as a single day workshop, rather than two half-day workshops. For a more detailed discussion of this workshop, as well as participants' feedback, see section 2.1 above	COMPLETE
Activity 4: An online discussion board will be facilitated by SU education faculty for all participating teachers and coaches, to take place over 8 weeks, 3 prior to and 5 following the summer institute.	From May 28 through July 22, SU professors facilitated an online discussion board for all participating teachers and coaches. For a more detailed discussion of this discussion board, as well as participants' feedback, see section 2.2 above.	COMPLETE
Activity 5: Math teachers working in the role of instructional coach and	Math instructional coaches and supervisors from participating districts received	COMPLETE

math supervisors from the participating districts will receive professional development on math content focuses coaching. The one day professional development will be provided by a national consultant.	professional development on math content-focused coaching in a one-day coaching workshop on March 26, instructed by author Lucy West. Twenty-two coaches and supervisors from the participating LEAs attended.	
Activity 6: Teachers will be provided with memberships in the National and Maryland Councils of Teachers of Mathematics (NCTM and MCTM).	All participating teachers received memberships to the National and Maryland Councils of Teachers of Mathematics (NCTM and MCTM).	COMPLETE
Activity 7: Teachers will receive technology items necessary to implement a lesson study model. Each participating teacher will receive a video iPod on which to view taped lessons, each district will receive a video camera for the explicit purpose of taping lessons. Software will be purchased for converting video to format needed for play on the ipod.	Teachers received their video iPods at a technology workshop on June 26. In the spring of 2008, each partner district received a video camera for taping the lessons	COMPLETE
Activity 8: Teachers will attend an orientation meeting before the Summer Workshop with professional development provided on the use of the technology and a capstone meeting after. Each LEA will hold three in-county lesson planning meetings to plan the lessons to be videotaped. .	Due to the tight grant timeline, the technology workshop was held after the Summer Program, on June 26. The Consortium also made the decision to substitute 6 additional hours for individual teachers to develop and refine their lesson plans in the spring for the three in-county lesson-planning meetings. The Cohort V capstone meeting is scheduled for September 13, 2008.	Technology Workshop/Lesson Planning Hours: COMPLETE Capstone Meeting: NOT YET COMPLETE
Activity 9: Teachers will participate in two additional professional development activities designed to focus on working with special education students in mathematics and differentiated instructional strategies.	The Consortium held a variety of professional development activities on these topics, including a workshop on June 19 by *Simply Achieve's* Dan Mulligan on special education and two Kagan workshops (April 26 and July 19) on cooperative learning strategies.	COMPLETE
Activity 10: Teachers will develop an online portfolio with mathematics lessons aligned with the Voluntary State Curriculum (VSC) for access by all Maryland teachers.	As part of their activities leading up to the Summer Program, participants developed and refined a lesson plan aligned with the VSC. At the end of Summer 2008 participants will develop a second lesson plan, in which they implement the	NOT YET COMPLETE

	strategies that have been addressed through grant professional development.	
Activity 11: Math Coordinators/ Supervisors from ESMC LEAs will conduct observations and meetings with teachers in the classroom and after school for ongoing, job-embedded follow-up to the summer institutes.	Over the next year, LEA math supervisors will be conducting observations and holding meetings with teachers in Cohort V. The goal will be to provide ongoing follow-up and support to help teachers implement what they have learned and apply it to their own teaching practice.	NOT YET COMPLETE
Activity 12: Teachers will give formative assessments to determine the progress of their students in math.	One of the topics of LEA follow-up over the next year will be to support teachers in administering formative assessments and using the results to inform their teaching. Because of the variety of assessments that are used among partner LEAs and the range of district policies related to these instruments, this follow-up will be conducted at the individual district level, rather than by the Consortium as a whole.	NOT YET COMPLETE

Appendix 2: Lesson Study Workshop Agenda

March 1, 2008

1. Breakfast (8:00-8:30)
2. Introductions (8:30-9:00)
    - Share one idea or practice from our past workshops that has impacted your teaching & one thing that you would still like to learn.
3. Lesson study video (9:00-9:30)
    - 10 min. NCTM video clip.
    - Overview of how the lesson study model will be adapted for our project.

4. Writing exercise: List the criteria that you would use to evaluate a colleague's mathematics lesson (9:30-9:45)

5. Demonstration lesson by Dr. Burgess. Use the criteria that you developed to evaluate the lesson (9:45-10:30)

6. Small group discussion (3-4 people per group): compile a collective list of negatives and positives for the lesson. Take Dr. Burgess' written lesson into account in your discussions (10:30-11:00)

7. Large group discussion: each group reports out on the positive and negative aspects of the lesson (11:00-11:30)

8. Lunch (11:30-12:00)

9. Code the lists of positives and negatives in terms of their alignment with the NCTM Principles and Process Standards (12:00-12:45).

10. Develop a revised, collective, agreed-upon set of criteria for evaluating mathematics lessons that is in alignment with the NCTM Principles and Process Standards. The criteria should be understandable to a teacher who is not familiar with the NCTM Standards (12:45-1:30)

11. Work in groups on re-developing/improving the original demonstration lesson. One group will be selected at random to teach their revised version of the lesson (1:30-2:15).

12. Teaching of the revised lesson (2:15-2:45)

13. Debriefing session on the strengths & weaknesses of the revised lesson (2:45-3:00)

14. Description of research connected with the project & associated paperwork.

Appendix 3: Pre-Workshop Participant Survey

Please complete this questionnaire and turn it in before today's session begins. ***The information you provide is confidential and will be analyzed by an independent evaluator; your responses will not be seen by anyone from your district.*** Thank you for your assistance.

Name: _____School District: _____

Section I: Online Discussion Board

1. **On average, how frequently have you logged onto the discussion board?**

   - Every day
   - A few times a week
   - Once a week
   - Less than once a week [*Please answer #**1b***]
   - Never [*Please answer #**1b***]

   1b. [*If you answered "less than once a week" or "never" to #1*] Why aren't you participating in the discussion more frequently? Is there anything that can be done to make you participate more?

   _____

   _____

2. **What have you liked most about participating in the online discussion?**

_____

_____

3. **Do you have any suggestions for ways this online discussion could be improved?**

_____

_____

Each of you previously participated in another online discussion board as part of your participation in the last Math Consortium Summer Program you attended. Based on your experience thus far, how valuable is the current discussion board compared to the first discussion board?

□ a) This discussion board is more valuable than the one that I participated in earlier. [*Please answer #5*]

❑ b) This discussion board is less valuable than the one that I participated in earlier. [*Please answer #5*]

❑ c) Both discussion boards seem to be equally valuable.

❑ d) I don't know which discussion board is more valuable.

❑ e) I didn't participate in an earlier Eastern Shore Math Consortium discussion board.

5. If you answered (a) or (b) to question 4 above, please explain why in the space below.

_____

_____

Section II: Professional Development Related to Lesson Study

6. Over the past few months, participants in this project have engaged in a variety of activities related to lesson study. How would you rate the value of each of the following parts of the project, in terms of the extent to which you think it has improved (or will improve) your teaching?

	Very valuable	**Valuable**	**Somewhat valuable**	**Not at all valuable**	**N/A**
a) March 1st workshop on lesson study	□	□	□	□	□
b) The feedback you received on the lesson plan that you submitted	□	□	□	□	□
c) The process of developing and submitting a lesson plan using the four-column lesson study format	□	□	□	□	□
d) The process of revising your lesson based on the feedback you received from SU	□	□	□	□	□
e) The process of videotaping your lesson	□	□	□	□	□

f) Participating in the online discussion board	□	□	□	□	□

7. To what extent do you agree or disagree with the following statements about the lesson study workshop and subsequent activities?

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	N/A
a) The instructions that I received on how to complete the activities this spring were clear (e.g., submitting lesson plan, videotaping class, etc.).	□	□	□	□	□	□	□
b) I have a clear understanding of what is meant by the process of "lesson study."	□	□	□	□	□	□	□
c) The feedback I received on the lesson plan that I submitted made the lesson much more effective.	□	□	□	□	□	□	□
d) Based on the activities thus far, I am glad that I participated in this grant.	□	□	□	□	□	□	□

8. What has been the <u>most</u> beneficial part of this project for you thus far?

_____

_____

9. **Are there any parts of the project that you have found less beneficial, or that have been problematic for you? If so, what?**

_____

_____

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

Appendix 4: Post-Workshop Participant Survey

Please complete this questionnaire and turn it in before today's session begins. ***The information you provide is confidential and will be analyzed by an independent evaluator; your responses will not be seen by anyone from your district.*** Thank you for your assistance.

1. **Name: _____**
2. **The pace of this workshop was:**

   ❒ Just right ❒ Too fast ❒ Too slow

3. **The length of this workshop was:**

   ❒ Just right ❒ Too short ❒ Too long

4. **The instructors employed approaches and methods that were compatible with my learning style and preferences.**

   ❒ Strongly agree ❒ Agree ❒ Disagree ❒ Strongly

5. **The amount of group-based work in this institute was:**

   ❒ Too much ❒ Just right ❒ Not enough

6. **The amount of individual-based work in this institute was:**

   ❒ Too much ❒ Just right ❒ Not enough

7. **Overall, the quality of this workshop was:**

   ❒ Excellent ❒ Good ❒ Fair ❒ Poor

8. To what extent do you agree or disagree with the following statements about the lesson study focus of the Summer Program?

	Strongly Agree	**Agree**	**Slightly Agree**	**Slightly Disagree**	**Disagree**	**Strongly Disagree**	**N/A**
a) The observation rubric is a practical and useful tool for evaluating lessons.	□	□	□	□	□	□	□
b) I plan to use the observation rubric on a regular basis in planning my lessons next year.	□	□	□	□	□	□	□
c) I found watching the TIMSS video to be a productive and useful exercise	□	□	□	□	□	□	□
d) I found the process of creating a lesson plan as a group to be a productive and useful exercise	□	□	□	□	□	□	□
e) If I were to re-write the lesson that I videotaped before the Summer Program, I would make it significantly different based on what I learned at the Institute	□	□	□	□	□	□	□
f) I feel that I will be a more effective teacher as a result of my participation in this grant.	□	□	□	□	□	□	□

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree	N/A
g) I liked the fact that the majority of the pre-workshop and workshop activities focused on lesson study.	□	□	□	□	□	□	□

9. List 2 Summer Program activities that you found to be <u>least useful</u>, and why:

1)

_____

_____

2)

_____

_____

10. List 2 Summer Program activities that you found to be <u>most useful</u>, and why:

1)

_____

_____

2)

_____

_____

11. What suggestions do you have for how this workshop could have been improved?

_____

_____

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.